

DOCUMENT NAME: SCOPE OF CLAIMS

WHAT IS CLAIMED IS:

1. A small-diameter resin twisted brush, in which  
  
the brush is made, with a multiple number of radially-projecting resin filaments mounted on, and kept clamped in, resilient, shape recoverable, and supple two or more stem materials, by twisting at both ends of said stem materials and shaping helical bristles around said stem materials; wherein  
  
the stems themselves are resilient, shape recoverable, and supple, maintaining the shape recoverability while adapting deformed conditions.
  
2. A small-diameter resin twisted brush as set forth in Claim 1, in which  
  
the two or more stem rods are constituted of resin filament rods and thermally fusible resin filament rods lined up in parallel; and  
  
said thermally fusible resin filament rods are melted during, before, or after a step of keeping the radially-projecting resin filaments clamped in the stem rods, holding the stem rods at both ends thereof, and twisting for forming a twisted brush shape; thereby  
  
fusing together the radially-projecting filaments that constitute bristles each with the two or more resin filament rods; and  
  
maintaining the shape of the twisted brush which prevents the bristles from falling out, prevents the resin filament rods which constitute the twisted stem portion from detwisting, and has helical bristles.

3. A small-diameter resin twisted brush as set forth in Claim 1 wherein  
the stem rods are constituted of thermally fusible resin-coated resin filament rods which  
have been pre-coated with a thermally fusible resin material.
4. A small-diameter resin twisted brush as set forth in Claims 1, 2 or 3, in which the brush  
is made with improved productivity by  
cutting at fixed intervals, a continuous twisted brush which is generated by twisting  
while the resin core material or the thermally fusible fibers, of any length, hold the  
radially-projecting fibers that constitute the bristles clamped at flexed intervals, subjecting to  
ultrasonic, radio frequency, or a machining treatment, thereby removing [sharp] edges  
generating a smoothened shape, thereby  
shortening the time per twisted brush for cooling and holding after the heat treatment.
5. A small-diameter resin twisted brush as set forth in Claims 1, 2 or 3 , wherein the bristle  
size is color coded by using a pre-pigmented resin for the resin filament rods or the thermally  
fusible fibers.
6. A small-diameter resin twisted brush as set forth in Claims 1, 2 or 3, wherein the  
small-diameter metal-free brush stem tips are subjected to ultrasonic, radio frequency, or a  
machining treatment, thereby removing [sharp] edges generating a smoothened shape, thereby  
facilitating brush insertion.